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EXAMINER

KHAN, TAHSEEN

ART UNIT

PAPER NUMBER

1783

NOTIFICATION DATE

DELIVERY MODE

04/22/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Advisory Action

Response to Arguments

1. Applicants state the following in their remarks: *"In addition, Applicants point out to the Examiner that Kobayashi does not irradiate a certain region of the layer (B) with radiation to "oxidize" the organic polysilane in the certain region. See, e.g., Table 1 on page 3 of the response filed July 21, 2010. This is because Kobayashi forms the polysiloxane layer by hydrolytic polycondensation of an organic silicone compound prior to irradiation. Thus, Kobayashi actually discloses irradiating the polysiloxane layer."*
2. The examiner respectfully submits that *Kobayashi* also discloses that part of its wettability variable layer (aka "wettability -- strange -- voltinism -- the layer", element 3 in Figures 1-6; corresponds to claimed forming layer (B)) can be **irradiated** by UV light via a **mask** to form high-wettability irradiated portions (element 3A in Figures 4-6) on its layer (Abstract and paragraphs 0016, 0038, 0087). Give the fact that this limitation in applicants' claims is a product-by-process limitation, the actual step of when the irradiation takes place on the wettability variable layer does not impart a structural property in the end product, as defined in the product claims, since *Kobayashi* still discloses what would result in irradiated portions which fulfills the current claim language limitation.
3. Applicants further state: *"Further, Kobayashi does not disclose impregnating the layer (B) in the certain region (i.e., the irradiated region) with conducting polymer to electrically connect the formed layer (C) and the substrate (A)."*

4. The examiner respectfully submits that *Kobayashi* discloses using polymers such as polyanilines (paragraph 0052) and polythiophenes (paragraph 0088) to form a layer (element 10' in Figures 4-7) over at least the irradiated portions.

5. Applicants further state: *"According to the present claims, only a certain region of the polysilane layer (B) of the present application is irradiated, forming an oxidized (or polysiloxane) portion only in the certain region, while the surrounding region remains polysilane."*

6. Upon further investigation, it has occurred to the examiner that applicants' claim 1's process limitation is somewhat vague in that it does not state the extent of oxidation of the organic polysilane. One could seemingly expect that any partial oxidation would result in the formation of organopolysiloxanes and a complete oxidation would result in the formation of silica (SiO_2). Again, given the fact that using radiation to "oxidize the organic polysilane" is a product-by-process limitation in applicants' independent claim 1; one could reasonably suggest, as per the guidelines concerning product-by-process limitations in the MPEP, that any precursor materials can be used to suggest the product of claim 1 so long as it results in the formation of organopolysiloxanes or silica, since the latter two are both resultants of the oxidation of organic polysilanes. And since *Kobayashi* discloses the formation of organopolysiloxanes, it therefore suggests the claimed product of applicants' independent, claim 1.

7. Applicants further state: *"According to the present claims, only a certain region of the polysilane layer (B) of the present application is irradiated, forming an oxidized (or polysiloxane) portion only in the certain region, while the surrounding region remains*

Art Unit: 1783

polysilane. See, e.g., page 9, lines 24-28 of the present specification. In contrast, in Kajiura and Kobayashi the entire layer (B) becomes polysiloxane before any further processing is performed."

8. The examiner respectfully submits that *Kobayashi* also discloses that part of its wettability variable layer (aka "wettability -- strange -- voltinism -- the layer", element 3 in Figures 1-6; corresponds to claimed forming layer (B)) can be irradiated by UV light via a mask to form high-wettability irradiated portions (element 3A in Figures 4-6) on its layer (Abstract and paragraphs 0016, 0038, 0087). Thus, *Kobayashi* is clearly disclosing the radiation of certain portions only. Additionally, the examiner has realized that the term "certain region" in independent claim 1 is also vague in that it does not precisely preclude the entire layer being irradiated.

9. Applicants further state: *"Thus, Kobayashi in combination with Kajiura fails to disclose oxidizing organic polysilane in a certain region and then applying a solution containing conducting polymer, water, and/or a hydrophilic solvent at least on the certain region to form layer (C), while impregnating the layer (B) in the certain region."*

10. The examiner respectfully submits that *Kobayashi* discloses applying a solution (aka "coating liquid"; element 10 in Figure 4) comprised of a hydrophilic solvent (paragraphs 0049, 0055, and 0080), water (paragraph 0055), and polymers such as polyanilines (paragraph 0052) and polythiophenes (paragraph 0088) to form a layer (element 10' in Figures 4-7) over at least the irradiated portions. Since *Kobayashi* discloses having electrodes and known conductive polymers like polyanilines and

Art Unit: 1783

polythiophenes as well as the use of conductive oxides like ITO (paragraph 0068) on its substrate, it would therefore be analogous to the claimed conductive substrate (A).

11. Applicants further state: *RESPONSE UNDER 37 C.F.R. § 1.116*

U.S. Application No. 10/594,840 (Attorney Docket Q97512)

Further, the substrate according to the presently claimed invention differs from the substrate of Kajiura, and as explained below, one of ordinary skill in the art in possession of the teachings of Kajiura would not have arrived at the electrically connecting the layer (C) and the substrate (A) according to the presently claimed invention."

12. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The examiner respectfully submits that *Kobayashi* has clearly discloses the same substrate as that of applicants'.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAHSEEN KHAN whose telephone number is (571)270-1140. The examiner can normally be reached on M-Th, 9:30am - 7:30pm EST.

14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on (571)272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1783

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/T.N.K./

TAHSEEN N. KHAN

Patent Examiner, Art Unit 1783

April 18, 2011

/Angela Ortiz/

Supervisory Patent Examiner, Art Unit 1798